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EXAMINER

YAM, STEPHEN K

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,093

Applicant(s)

KIERMEIER ET AL.

Examiner

Stephen Yam

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 and 28 is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-25 is/are rejected.
- 7) ☒ Claim(s) 14 and 26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0802. 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 12, 13, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kipphan et al. US Patent No. 4,976,545 in view of Bowen et al. US Patent No. 4,687,943.

Regarding Claims 1, 12, 16, and 17, Kipphan et al. teach a system and apparatus comprising an external drum/platesetter (11) for supporting an unimaged printing plate (1) and a moveable assembly (3) (see Col. 5, lines 32-35) comprising a light source (9) directing light generally normal to said drum and a light sensor (6) for detecting reflected light originating from said light source. Regarding Claim 17, Kipphan et al. teach the support surface as an external surface of a drum. Kipphan et al. do not teach at least one groove formed said drum/platesetter for preventing light from said light source from being reflected towards said light sensor. Bowen et al. teach (see Fig. 1A and 4) a system for detecting the edge of a film comprising a drum/platesetter (12) for supporting a film (11), an assembly comprising a light source (31a,31b) and a light sensor (A,B,C in (50)) for detecting reflected light originating from said light source, and a groove (69) formed in said drum/platesetter for preventing light from said light source from being reflected towards said light sensor (see Col. 7, lines 13-17), wherein the groove has a geometric cross section for directing light from said source that is incident upon said at least one groove, away from said light sensor (see Col. 7, lines 13-17). It would have been obvious to one

of ordinary skill in the art at the time the invention was made to use a groove in the drum/platesetter as taught by Bowen et al. in the system of Kipphan et al., to provide improved detection of edge registration markings for printing-plate identification.

Regarding Claim 2, Kipphan et al. in view of Bowen et al. teach the system in Claim 1, according to the appropriate paragraph above. Kipphan et al. do not teach the light source directing light at an angle between 83 degrees and 90 degrees with respect to the drum. It is well known in the art to use various incidence angles of light on a surface to vary the reflection characteristics. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide light from the light source at an angle between 83 degrees and 90 degrees with respect to the drum in the system of Kipphan et al. in view of Bohen et al., to minimize the light spot on the surface of the printing plate to increase detection sensitivity.

Regarding Claims 13, Kipphan et al. in view of Bowen et al. teach the system in Claim 12, according to the appropriate paragraph above. Bowen et al. also teach the groove having a bottom surface (see Fig. 4). Kipphan et al. do not teach the bottom surface positioned at an angle of about 120 degrees from a first side of groove and positioned at an angle of about 60 degrees from a second side of the groove. It is well known in the art to vary the angle of a surface to change reflection characteristics of light incident on the surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to position the bottom surface at 120 degrees and 60 degrees from a first and second side of the groove, respectively, in the system of Kipphan et al. in view of Bowen et al., to provide different reflection characteristics to optimize the light absorption of the groove.

Regarding Claim 15, Kipphan et al. in view of Bowen et al. teach the system in Claim 1, according to the appropriate paragraph above. Kipphan et al. do not teach the light sensor providing an electrical signal having at least two different voltage levels corresponding to detected light reflected from said plate and light reflected from said groove. Bowen et al. teach the light sensor providing an electrical signal (see Col. 7, lines 65-67) having two different voltage levels (0.5 volts vs. 0.1 volts) corresponding to detected light reflected from said plate (see Col. 7, line 65 to Col. 8, line 6) and light reflected from said groove (see Col. 8, lines 7-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an electrical signal having at least two different voltages levels corresponding to light reflected from said plate and from said groove as taught by Bowen et al. in the system of Kipphan et al. in view of Bohen et al., to distinguish markings/sprocket holes in the edge of the printing plate, as taught by Bohen et al. (see Col. 8, lines 8-11).

3. Claims 3-7, 10, 11, 18-20, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kipphan et al. in view of Bowen et al. as applied to Claim 1, further in view of Schumann et al. US Patent No. 5,992,325.

Regarding Claims 3-5, 11, 18, 19, and 22, Kipphan et al. in view of Bowen et al. teach the system and apparatus in Claims 1, 16, and 17, according to the appropriate paragraph above. Regarding Claim 22, Bowen et al. also teach the groove has a geometric cross section for directing light from said source that is incident upon said at least one groove, away from said light sensor (see Col. 7, lines 13-17). Kipphan et al. do not teach the groove formed parallel to a longitudinal axis of the drum. Schumann et al. teach (see Fig. 1 and 3) a system for detecting an

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edge of a printing plate (8) comprising an external drum (5) for supporting the printing plate, an assembly with a light sensor (6) (see Col. 3, lines 42-44), and at least one groove (in (4)) formed into said drum that prevents light from being transmitted towards light sensor (blocked by the insertion of printing plate- see Col. 6, lines 5-7, 15-17, and 55-58), wherein the groove is formed parallel to a longitudinal axis of said drum, extends along the entire length of the drum operative to support said plate, and is generally square and rectangular. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a groove formed parallel to a longitudinal axis of the drum as taught by Schumann et al. in the system of Kipphan et al. in view of Bowen et al., to also detect the leading or trailing edge of the printing plate and secure the printing plate to the drum.

Regarding Claim 6, Kipphan et al. in view of Bowen et al. and Shumann et al. teach the system in Claim 3, according to the appropriate paragraph above. Kipphan et al. do not teach a groove having a width between about 1mm and 2mm. It is well known in the art to use a groove width similar to the thickness of the printing plate, to fully secure the printing plate to the drum. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a groove width between about 1mm and 2mm in the system of Kipphan et al. in view of Bowen et al. and Shumann et al., to enable the system to accommodate printing plates having a thickness of about 1mm to 2mm and secure the printing plates to the drum.

Regarding Claim 7, 10, 20, and 25, Kipphan et al. in view of Bowen et al. and Shumann et al. teach the system and apparatus in Claims 3 and 19, according to the appropriate paragraph above. Regarding Claim 25, Shumann et al. teach the groove formed parallel to a long direction of said support surface (see Fig. 1)- also, since the claim language does not provide the support

necessary for performing the detection of a skewed plate, the intended use of the groove cannot be given patentable weight. Kipphan et al. do not teach an antireflective layer disposed on a portion of an inside surface of the groove for reducing the amount of light reflected from the inside of the groove. Bowen et al. teach an antireflective layer (see Col. 7, lines 16-17) disposed on a portion of an inside surface of the groove for reducing the amount of light reflected from the inside of the groove. Regarding Claim 10, Bowen teach the antireflective layer containing a chromophore having a peak absorption wavelength substantially the same as the light source (as black color equally absorbs light of all wavelengths). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an antireflective layer on a portion of an inside surface of the groove as taught by Bowen et al. in the system of Kipphan et al. in view of Bowen et al. and Shumann et al., to absorb light and create greater contrast between the groove and the printing plate.

Regarding Claims 23 and 24, Kipphan et al. in view of Bowen et al. and Shumann et al. teach the system and apparatus in Claim 22, according to the appropriate paragraph above. Bowen et al. also teach the groove having a bottom surface (see Fig. 4). Kipphan et al. do not teach the bottom surface positioned at an angle of about 120 degrees from a first side of groove and positioned at an angle of about 60 degrees from a second side of the groove. It is well known in the art to vary the angle of a surface to change reflection characteristics of light incident on the surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to position the bottom surface at 120 degrees and 60 degrees from a first and second side of the groove, respectively, in the apparatus of Kipphan et al. in view of Bowen

et al. and Shumann et al., to provide different reflection characteristics to optimize the light absorption of the groove.

4. Claims 8 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kipphan et al. in view of Bowen et al. and Schumann et al. as applied to Claim 1, further in view of Hamanaka US Patent No. 5,046,159.

Regarding Claim 8 and 21, Kipphan et al. in view of Bowen et al. and Shumann et al. teach the system and apparatus in Claims 3 and 19, according to the appropriate paragraph above. Kipphan et al. do not teach the antireflective layer selected from black velvet, black plush, black cloth, black paint, or black oxide. Hamanaka teaches (see Fig. 4a) a groove (32) with an antireflective layer from black paint to absorb light (see Col. 5, lines 25-29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use black paint as the antireflective layer as taught by Hamanaka in the system and of Kipphan et al. in view of Bowen et al. and Shumann et al., to further reduce reflected light using ordinary and affordable materials and process.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kipphan et al. in view of Bowen et al. and Schumann et al. as applied to Claim 1, further in view of Onishi et al. US Patent No. 6,469,808.

Regarding Claim 9, Kipphan et al. in view of Bowen et al. and Shumann et al. teach the system and apparatus in Claim 3, according to the appropriate paragraph above. Kipphan et al. do not teach the antireflective layer as a black polymer. Onishi et al. teach (see Fig. 19) a groove

(13') and an antireflective layer (4') as a black polymer (see Col. 8, lines 47-56) to prevent reflected light from reaching a light sensor (7'). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a black polymer as the antireflective layer as taught by Onishi et al. in the system and apparatus of Kipphan et al. in view of Bowen et al. and Shumann et al., to provide an easily-manufactured layer for attachment to the groove.

Allowable Subject Matter

6. Claims 27 and 28 are allowed over the prior art of record.
7. Claims 14 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claims 14 and 26, the invention as claimed, specifically in combination with two grooves diagonally across the drum both containing an antireflective layer on the inner surface, is not disclosed or made obvious by the prior art of record.

Regarding Claims 27 and 28, the method as claimed, specifically in combination with illuminating a portion of a groove with a light source, detecting the light reflected from the groove, detecting the light reflected from a printing plate, moving the light source along the groove, comparing the difference between the detected light levels to detect an edge of the printing plate, is not disclosed or made obvious by the prior art of record.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ganton US Patent No. 6,130,702, teaches a system for detecting the edge of a printing plate on a printing drum using reflected light.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (703)306-3441. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703)308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7724 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

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August 7, 2003


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